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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/847,142

Filing Date: May 02, 2001

Appellant(s): KAIKURANTA ET AL.

Joseph V. Gamberdell  
For Appellant

**EXAMINER'S ANSWER**



This is in response to the appeal brief filed January 17, 2005 appealing from the Office action mailed July 14, 2004.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

Koli, Omagari, Patent application publication 06-27461, September 1994.

Takeshi, Yaguchi, Patent application publication 08-265413, October 1996.

Hisao, Matsushima, Patent application publication 11-327509, November 1999.

Ryuhei, Tsuji, Patent application publication 11-126047, May 1999.

Japan patent application 11-88948, September 1997.

Japan patent application 11-88948, September 1997.

Toshiteru, Hayasaka, Patent application publication 08-148056, June 1996.

Japan patent application 8-148056, June 1994.

5847336	Thornton	12-1998
5936554	Stanek	8-1999
6222466	Uggmark	4-2001

### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7, 11, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thornton 5,847,336 in view of Stanek 5,936,554.

Regarding claim 1, the claimed keys are shown as item 14; the switching means is shown as item 62; and the illumination means s shown as item 18. Thornton teaches LEDs but the LEDs are not necessarily layered foil structures. As admitted in the specification, of the instant application, OLEDs are layered foil structures. It would have been obvious to one of ordinary skill in the art to substitute a conventional LED for an OLED since they perform the same light emitting functions. Thornton does not teach a means for dynamically illuminating individual keys

with different illumination effects. Stanek teaches in col. 5 a keyboard with means for dynamically controlled illumination of individual keys. It would have been obvious to include a means to effect such illumination controls for the reasons stated in col. 8.

Regarding claim 2, see claim 1.

Regarding claims 3 and 4, see figure 6. It is conventional to connect a key or a light source to a ground potential which forms a return path for the circuit.

Regarding claim 5, see figure 3.

Regarding claim 6, it is conventional to use voltage inputs to control the state of a device.

Regarding claim 7, the use of a switch per light is considered an obvious design choice since the number of switches per light is not critical. The voltage control lines have been discussed above.

Regarding claim 11, see figure 3.

Regarding claim 16, the keyboard made with a plurality of LEDs made of layered foil structures has been discussed in claim 1. It would have been obvious to use the keyboard in the same way as a keyboard made with conventional LEDs since the LEDs function equivalently. Thorton does not teach a means for dynamically illuminating individual keys with different illumination effects. Stanek teaches in col. 5 a keyboard with means for dynamically controlled illumination of individual keys. It would have been obvious to include a means to effect such illumination controls for the reasons stated in col. 8.

Claim 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thornton and Stanek as applied to claim 5 above, and further in view of 11-126047.

Regarding claims 8 and 9, Thornton does not explicitly teach a converter or a serial to parallel controller. 11-126047 teaches the converter/controller function. It would have been obvious to use the control circuits to convert illumination commands into actual signals for controlling the lights.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thornton, Stanek, and 11-126047 as applied to claim 8 above, and further in view of 11-327509.

Regarding claim 10, the prior references do not teach the use of sequence memory to control the illumination. This feature is taught by 11-327509. It would have been obvious to use memory to control a display pattern since this would require relatively few hardware components.

Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thornton and Stanek as applied to claim 1 above, and further in view of 08-148056.

Regarding claim 12, the structure in Thornton is similar to the claimed key structure with several minor differences. The claimed mechanical structure, dome layer, pcb, and key layer are shown in Figure 1. It would have been obvious that the particular key structure is merely an obvious design choice since a variety of mechanical structures perform the function equally well.

Regarding claim 13, the use of a perforated layer and an outer cover is conventional in switch structures. The perforated layer allows the contacts between the switch and the circuit board to complete the circuit for switch actuation and an outer cover allows an overlay to identify the keys.

Regarding claim 14, the use of OLEDs have been shown to be obvious.

Regarding claim 15, the use of light guides is conventional in lighted keyboards and permits the use of a single light source to illuminate an area.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thornton and Stanek as applied to claim 16 above, and further in view of 08-265413.

Regarding claim 17, 08-265413 teaches the function of using keypad illumination to identify the call. It would have been obvious to combine the references since they are in the same field of endeavor. The use of the same device in a known way is considered obvious.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thornton and Stanek as applied to claim 16 above, and further in view of 6-274261.

Regarding claim 18, the reference teaches the illumination of specific keys in specific modes to indicate that one key is more preferable than others. It would have been obvious to use selective lighting to help the user distinguish the critical keys over the remaining keys of the keyboard to simplify usage.

Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thornton and Stanek as applied to claim 16 above, and further in view of 11-88948.

Regarding claims 19 and 20, the reference teaches the use of games on cell phones using the keypad of the phone. As stated above, it would have been obvious to selectively illuminate keys to aid the user in key selection.

Claims 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stanek.

Regarding claim 21, the claimed mechanical support structure is shown as figure 3, item 52; the claimed plurality of keys is shown in figures 1 and 8; and the claimed layer with switching function and illumination structure for the keys is shown as item 48. The illumination

structure is not a layered foil structure but conventional LEDs. As admitted in the specification, of the instant application, OLEDs are layered foil structures. Stanek teaches in col. 8, lines 65-end that other illumination means may be used to illuminate the keys. It would have been obvious to substitute an OLED for a conventional LED since they are functionally equivalent.

Regarding claim 22, Stanek teaches that the illumination devices are reconfigurable for different illumination effects. It would have been obvious that where foil structures are used, these devices may also be reconfigured to achieve the same desired functions.

Regarding claim 23, as stated above, it would have been obvious to use OLEDs since they are functionally equivalent to conventional LEDs.

Regarding claim 24, applicant admits on page 6 of the specification that organic FET comprise conventional switches. It would have been obvious to use such devices when using an OLED because the use of devices with similar processing structures allows the devices to be easily integrated onto a substrate.

Regarding claim 25, Figure 7 teaches the use of a circuit board to support the switching layer.

Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stanek as applied to claim 21 above, and further in view of Uggmark and Thorton.

Regarding claim 26, Stanek shows the claimed pair of conductive patterns in figures 6 and 7. Stanek does not show a resistive strip section that links the conductive patterns. Figure 2 of Uggmark teaches a prior art keyboard with resistive strip sections which link conductive patterns for keys having a first and a second end. It would have been obvious combine the teachings since they are in the same field of endeavor. It is understood that key arrays are not

limited to one particular structure. Uggmark does not show illumination structures coupled to a common coupling point. Thornton teaches a plurality of illumination structures with addressable lines. As stated above it would have been obvious to combine Thornton with Stanek and the use of foil structures would also have been obvious. One of ordinary skill in the art would have a knowledge of basic electrical systems. It is conventional to connect a plurality of light sources to a common voltage and to use the other input to create a voltage differential to actuate a particular light. Thus, it would have been obvious to connect one end of the illumination structures to a common point to establish the common potential. Such a configuration simplifies the circuitry.

Regarding claim 27, Figure 3 of Thornton shows control lines equal to the number of illumination structures for individual control.

Regarding claim 28, it would be understood by one of ordinary skill in the art that the control lines of Thornton input voltages to actuate the individual illumination structures.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stanek.

Regarding claim 29, the claimed mechanical support structure is shown as figure 3, item 52; the claimed plurality of keys is shown in figures 1 and 8; and the claimed layer with switching function and illumination structure for the keys is shown as item 48. The illumination structure is not a layered foil structure but conventional LEDs. As admitted in the specification, of the instant application, OLEDs are layered foil structures. Stanek teaches in col. 8, lines 65-end that other illumination means may be used to illuminate the keys. It would have been obvious to substitute an OLED for a conventional LED since they are functionally equivalent.

#### **(10) Response to Argument**

In determining the appropriate standard for obviousness the Supreme Court in KSR International Co. v. Teleflex Inc. et al, 550 U.S. \_\_\_\_ (2007) reaffirmed the standard of review under Graham v. Deere 383 U.S. 1, 148 USPQ 459 (1966). It held that the standard of teaching, suggestion, or motivation (TSM) was appropriate. But it also held that obviousness is not strictly limited to the TSM requirements. One must consider the totality of the art from the point of view of a skilled artisan. Thus, the fact that a reference teaches one way of doing something does not preclude a finding of obviousness when items are combined for a different function. The Court specifically stated that “if a person of ordinary skill in the art can implement a predictable variation, Section 103 likely bars its patentability.” While the court stated that mere conclusory statements is an insufficient reason to combine known elements, it stated that “the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take into account of the inferences and creative steps that a person of ordinary skill in the art would employ.” This evaluation includes the use of common sense and whether the combination of familiar elements according to known methods yields predictable results.

Applicant's arguments essentially consists of two prongs. First, that the prior art does not teach the use of layered foil devices within a keypad, and second, that it would not have been obvious to use such a device within a keypad (impermissible hindsight). While, the Examiner agrees with the first prong, the Examiner disagrees with applicant's position that the substitution of a conventional form of lighting within a key with a new form of lighting would not have been obvious. The courts have long held that the substitution of devices or means with different devices or means that perform the same function would have been obvious. In re Fout 675 F.2d

297, 213 USPQ 532 (CCPA 1982); In re O'Farrell 853 F.2d 894, 7 USPQ2d 1673 (FED. CIR. 1988).

The claims recite the combination of a keypad with illumination means in the form of layered foil structures or OLEDs. As shown by the applied art, the use of various lighting means within a key or keypad is known in the art. The light provides an indication to the user of the status of the key or the function to be performed by the key. Applicant is merely substituting a new form of illumination in place of a conventional illumination means. The results are both predictable and based on common sense. It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute a new form of illumination to gain the advantages inherent in the new means. The results would clearly be predictable. For example, a fluorescent bulb may replace an incandescent bulb for energy efficiency. A LED light source would provide the advantage of a longer lasting source of illumination with lower power consumption and heat dissipation. Similarly, a layered foil structure is an advancement over a conventional LCD/LED device since the device does not require a separate light source and is more compact.

Admittedly, the use of layered foil devices does provide advantages over conventional illumination means. However, such advantages would be known to the practitioner and the results would be highly predictable. In fact, it is these advantages that would cause a person of ordinary skill in the art (POSITA) to select and to substitute the layered foil device in place of conventional illumination means.

**(11) Related Proceeding(s) Appendix**

Art Unit: 2612

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

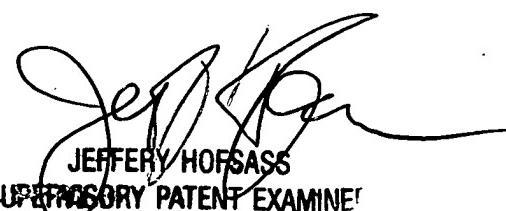
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